**Justin T. Knox**

**Ann Arbor, MI**

**Available to Interview: Immediate (48 hours’ notice requested)**

**Available to Start: 2 weeks from date of offer**

**Summary**

Justin is a CISSP-certified Senior Infrastructure Administrator with two decades of experience in systems, security, and network engineering and operational support. Specializing in Red Hat Enterprise and BSD Linux distros, virtualization, automation, and orchestration, he excels in managing and securing complex IT infrastructures for organizations spanning utilities, IT, industrial, and healthcare sectors. He is skilled in leveraging automation tools such as Ansible and Terraform for infrastructure provisioning and management, including custom scripting for content and patch management typically handled by Red Hat Satellite. At the Great Lakes Water Authority, he has successfully developed and maintained their OT infrastructure while implementing security measures to sustain critical systems and mission-critical operations, maintaining compliance with NIST Cybersecurity guidelines. Finally, he is local to Ann Arbor, agreeable to on-call rotations and hybrid work in Jackson, and can begin work two weeks after an offer is extended.

**Education**

University of Tennessee, Knoxville

* M.S.C.S. Data Science and Intelligent Systems (in progress)

DeVry University

* **Bachelor of Science - Computer Engineering Technology**

**Certifications**

Computing Technology Industry Association (COMPTIA)

* **SEC+ / Security+**

International Information System Security Certification Consortium, ISC2

* **CISSP / Certified Information Systems Security Professional**

**Skills**

* **Top Skills:** Cybersecurity, Unix/Linux Systems Administration, Networking, System Administration, Technical Support, Virtualization, Troubleshooting, Network Security, Software Development, IT Infrastructure Management, Network Engineering, Vulnerability Assessments, Patch Deployments, Disaster Recovery Planning
* **Programming/Scripting Languages:** C, C++, Java, SQL, BASH, LaTeX, YACC, YAML, XML, HTML, CSS, JavaScript, Ruby, Python, Assembly
* **Operating Systems:** Red Hat Enterprise Linux (RHEL) 7, Linux (VMWare), Windows 10, Windows Server 2016, ESXi, OpenBSD, FreeBSD, NetBSD, Docker, XCP-NG, EVE-NG, VirtualBox
* **Windows Technologies:** Sysinternals, PowerShell, Windows Subsystem for Linux, WMIC, Firewall, Registry
* **Virtualization and Cloud Platforms:** ESXi, VMware, VirtualBox, Docker, AWS EC2
* **Networking and Infrastructure:** TCP/IP, MPLS, Routers, Switches, Network Administration, Wireless Networking, Network Services, Fiber Optics, Ethernet, IP, Network Security, Embedded Systems, Networking Protocols (NTP, DNS)
* **Security and Compliance:** CISSP, Ethical Hacking, Cybersecurity, NIST 800-53, Security Audits, SSL Certificates, Key Management, Network Security, Multi-Factor Authentication (MFA)
* **System Administration and IT Support:** System Administration, Active Directory, Linux System Administration, Technical Support, Troubleshooting, System Deployment, Server Administration, System Lifecycle Management
* **Hardware and Embedded Systems:** Computer Hardware, Eagle PCB, Field-Programmable Gate Arrays (FPGA), Testing, Hardware, Fiber Optics
* **Software Development and Integration:** Software Development, Programming, Web Development, Integration, Testing

**Experience**

**Great Lakes Water Authority, Operational Technology Cybersecurity Sep 2023 - Present**

***Sr. Infrastructure Administrator (Cybersecurity)***

* Developed, implemented and maintained Information, Operational and Networking technologies to ensure and provide the sustained mission of the GLWA’s process control network, striving to exceed guidelines published within the NIST’s Cybersecurity Framework.
* Developed and deployed custom Bash scripts and internal software to manage critical tasks such as content management, patch management, provisioning, and subscription management across Linux distros, ensuring system compliance and operational efficiency.
* Skills: JSON · ReST APIs · PowerShell · NMap · Linux · Metasploit · NIST 800-153 · NIST CSF · Wireshark · tcpdump

**Corewell Health, Critical Environment Engineering (CEE) | Contract June 2023 – Sep 2023**

***Systems Engineer***

* Collaborated with the cross-functional agile train to deploy, provision, and maintain the company’s existing and future infrastructure across OSI L1-4, with a focus on system lifecycle management and performance optimizations, ensuring seamless upgrades and patch deployments.
* Doubled the production compute infrastructure within a 40% faster than estimated delivery time through providing experienced deployment methods using industry best practices.
* Decreased CEE related incidents by 4% through complete audit and documentation overhaul for the East MI region (in progress), including workflow and procedure enhancements for patch management.
* Saved the company an estimated 8-10 hours / week / person in labor through developing and deploying the “Generate Decom” feature for the internal DC inventory system.
* Skills: SQL· JavaScript · GitHub· Python · PowerShell · Bash · Splunk · SCADA

**jPeg Design March 2023 – June 2023**

***Sr. Network*** ***Engineer***

* Worked in a 3-person team to design, deploy and maintain small to medium business infrastructure.
* Developed the company’s first inventory, customer, client and installation databases, effectively eliminating 15 hours / week / user for prior data entry.
* Developed in-house automation software, including password management and deployment monitoring software.
* Skills: PostgreSQL · Python · GitHub · Azure PostgreSQL · AWS · GCVE · PowerShell · Bash · MoIP· Cisco CLI

**Alchemy Computing, Dumptd December 2021 – March 2023**

***Freelance Technical Consultant, CTO***

* Developed and implemented features, coordinating with engineering teams for the prototyping of front end and back-end systems in the creation and deployment of company infrastructure. Primary clients were in the startup space.
* Skills: Laravel· Ruby· Ruby-on-Rails· PHP· TomTom API· Google Maps API· Ansible· Docker· Python · GitHub · RedHat KVM· Docker· GCVE · Active Directory· Windows Server 2016· MoIP· VoIP· Cisco CLI· Juniper· pfSense · PlatformIO · JSON · HTML · MySQL· PostgreSQL · OpenBSD · Iptables · Palo Alto Firewalls · RFID · QR-Code Programming

**Google | Engineering Field Services December 2018 – December 2021**

***Sr. Infrastructure Operations Engineer, GCVE Tech Lead***

* Tech Level-III, Server, Network and Hardware Operations Teams
* Worked in the L4-5 global EFS team covering all architectures for the entirety of the Google production fleet. Collaborated with a 12-member team to lead projects and teams to deploy, maintain and configure the production infrastructure from Layers 1 – 4 of the OSI model.
* Provided zero loss to five-9 SLO and SLA during the 400% increase to production load of the Covid-19 outbreak with an 80% reduction in staff.
* Saved the company an estimated $450k in lost compute time to isolate an issue occurring on the power line which took 8 months to gather the data for conclusive enough evidence to change the design.
* Led the project team which deployed 1/3 of the GCVE infrastructure in which we were able to complete the project 75% ahead of schedule.
* All contractors on the team were converted to full time.
* Built and deployed globally distributable internal systems monitoring, configuring and reporting software to effectively eliminate 80% of my original job functions.
* Hosted and developed internal “lunch and learns” covering Emacs, Linux and systems internals w/ 12-20 people in recurrent attendance.
* Received 19 Peer Bonuses and 2 Challenge Awards for Hurricane and Pandemic Support
* Skills: SQL· GSQL· Kubernetes · CI/CD· HTML· JavaScript· CSS· Bash· C++

**Switch LTD | Network Operations | Contract to Hire July 2017 – December 2018**

***Network Operations Technician***

* Coordinated with engineering teams to provide infrastructure support.
* Implemented custom programmed outlook filters combined with email lexical analysis to autogenerate tickets based on customer emails saving approximately 65% of time spent answering emails.
* Skills: AutoHotkey · BGP · PowerShell · Splunk

**Pinnacle Community Services | Information Technology October 2016 – June 2017**

***Systems Administrator IV***

* Worked in a marketing automation platform organization, assisting businesses of various sizes. Collaborated with a 1,200-person team to improve security and comply with SOC 2 and PCI-DSS.
* Led projects to strengthen security processes and promote best practices.
* Developed internal file-share-system and converted over to bring organization into HIPAA compliance.
* Created Porteus system images to access in-house customer care system from Windows XP machines for approximately 30 remote sites.
* Secured the companies trunks using IPsec over GRE on Cisco and Avaya infrastructure.
* Saved the company approximately $80k from unneeded legal hours through conducting an in-house investigation using the Sleuth digital forensics toolkit to procure documents required for discovery.
* Skills: Cisco· Avaya· Windows Server 2012· Active Directory· Samba· Kerberos· Porteus Linux· Java· PowerShell · BSD

**Scientific Games November 2013 – April 2015**

***Technical Specialist II | Technical Documentation and Training***

* Brought travel expenditures down by 95% through creating a digital library of in-house training videos through the Casino Laboratory that our team also created.
* Saved approx. 650 hours / week in labor through consolidating the Geographic Dependent Jurisdiction codes technicians were sourcing in to a single database.
* Skills: Microsoft SharePoint· Arch Linux· PHPFM· Memcached· NGINX · Apache· WordPress · Jekyll· Markdown · Yammer

**Alchemy Computing September 2009 – November 2013**

***Freelance Technical Consultant***

* Focused specialties included in-home PC Repair, small website development, electronics prototyping.
* Skills: C++ · OpenCV · Java · Processing · NodeJS · Bluetooth Protocol · RTSP · MIDI · ClamAV · Malware Removal · Digital Forensics · Data Recovery

**British Telecom | Contract-to-Hire May 2008 – September 2009**

***Network Event Management Technician III***

* Assisted with the internal acquisition of Infonet’s global NOC to the UK’s infrastructure.
* Kept the UK’s network functional through the 2008 Olympic games through acquiring total coverage over the management platform for OSI L1-3 over a Cisco, Juniper, Alcatel-Lucent, Ciena mixed platform.
* Skills: MPLS, EIGRP, IGRP, SDH, PDH, ATM Frame-Relay, TCP/IP V4/V6, SIP, ARP, CDP, CARP, EIGRP, OSPF, BGP, VTP, EtherChannel, 802.1Q trunking, QoS, Multicast, 802.11a/b/g/n/ac, IPsec, LDAP, RADIUS/TACACS+, SNMP, NTP, VRF and HTTP/HTTPS

**Synetcom Digital June 2006 – November 2007**

***Junior Electronics Engineer***

* Worked in the engineering team developing industrial SCADA radios for monitoring digital IO, 4-20ma sensor loops, PWM, and industrial video applications.
* Provided increased customer acquisition through developing the GUI for the PLC system’s first user control panel.
* Prevented external theft of IP through securing the internal LAN communications prior to one particular vendor visit.
* Skills: digital IO · Industrial Automation · 4-20ma sensor loops · PWM· Allen Bradley · PLCs · PIC Programming · BASIC Stamp Development · Propeller Chip· FHSS · Antenna Design and Implementation · EagleCAD · EWB · National Instruments · Oscilloscope · Function Generator · Traffic Generators · Standard Laboratory Equipment · Spectrum Analyzer · Embedded Linux · Windows CE · C++ · Ladder Logic

**DeVry University March 2004 - June 2006**

***Tutor and Laboratory Technician***

* Tutored students in the network security and advanced micro peripheral courses.
* Network Design, Engineering and Architecture
* Cisco CLI commands, interfacing and scripting.
* Implementing network configurations with Java
* Network Packet analysis
* Skills: C++ · Java · Wireshark · Cisco · Novell · Windows 2000 Networking · RedHat Linux · Gentoo · TCP/IP Packet Optimization

**Projects**

**"Homelab" - FOSS Home Computing**

* Fully self-hosted search, DNS, firewall, remote access, file storage, cryptocurrency mining and blockchain hosting.
* Technologies used: SearxNG, dnsmasq, Cisco 1841, Palo-Alto PA-500, OpenVPN, IPSEC, GRE, BGP (dn42), FreeNAS, NFS, Monero, Dash, Litecoin, Ethereum, Bitcoin (miners and full-nodes)

**"Cyboard" - Longboard Security System and Datalogger**

* Raspberry Pi based "Smart skateboard", with on-device weather detection, key fob to "lock" the board, motion and location detection for "ride-data".
* Technologies used: Python, SQLLite, GPS PA1616S, Raspbian, NeoPixel LED, Remote Control Encoder PT2262, SHT30 Sensor, ADXL343 - Triple-Axis Accelerometer
* Scripts to aid the security camera installer, currently scans the network to detect any cameras, shows encrypted traffic status. Draws diagram of connections to router.
* Technologies used: LLaMA 7B, ChatGPT, Python, PostgreSQL, SQLite, Azure, GCP, AWS, ARP, DNS, DHCP, RTSP, RTP